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Two new species of *Stachybotrys* from soil

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Abstract — Two new species are described and illustrated: *Stachybotrys jiangziensis* and *S. xigazenensis*, both from soil in China. The type specimens (dried cultures) and living cultures are deposited in the Herbarium of Shandong Agricultural University Plant Pathology (HSAUP). Isotypes are kept in the Herbarium of Institute of Microbiology, Academia Sinica (HMAS).

Key words — taxonomy, soil fungi, dematiaceous hyphomycetes

Introduction

Stachybotrys Corda was erected in 1837, and since then 96 epithets have been proposed in the genus (Index Fungorum 2010). This genus is characterized by distinct, mononematous conidiophores bearing an apical cluster of several swollen phialides producing unicellular phialoconidia that become aggregated in globose masses. In the course of a survey of soil dematiaceous hyphomycetes in China, several unusual species of *Stachybotrys* were collected. Two of them are described as new species, *S. jiangziensis* and *S. xigazenensis*.

Taxonomy

Stachybotrys jiangziensis Y.M. Wu & T.Y. Zhang, **sp. nov**. Fig. 1

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Coloniae in CMA effusae, atrogriseae vel nigrae. Hyphis ramosis, septatis, laevibus, hyalinis vel subhyalinis, 1.5–3 µm crassis. Conidiophora erecta, 2–4-septata, basim versus subhyalina, supra griseo-brunnea, levia, 60–80 µm longa, ad basim 4–5 µm diam. Phialides 6–8 ad apicem conidiophori productae, pallide brunneae, leves, 8–10 × 5–7 µm. Conidia tuberculata, globosa vel subglobosa, brunnea vel atrobrunnea, 6–9 µm diam.

Holotype: China. Tibet, Jiangzi, from a grassland soil, altitude 4050 m, 9 Sept. 2007, Y.M. Wu, HSAUPII$_{07}$0881, **holotype**; HMAS 196256, **isotype**.

Etymology: in reference to the type locality.

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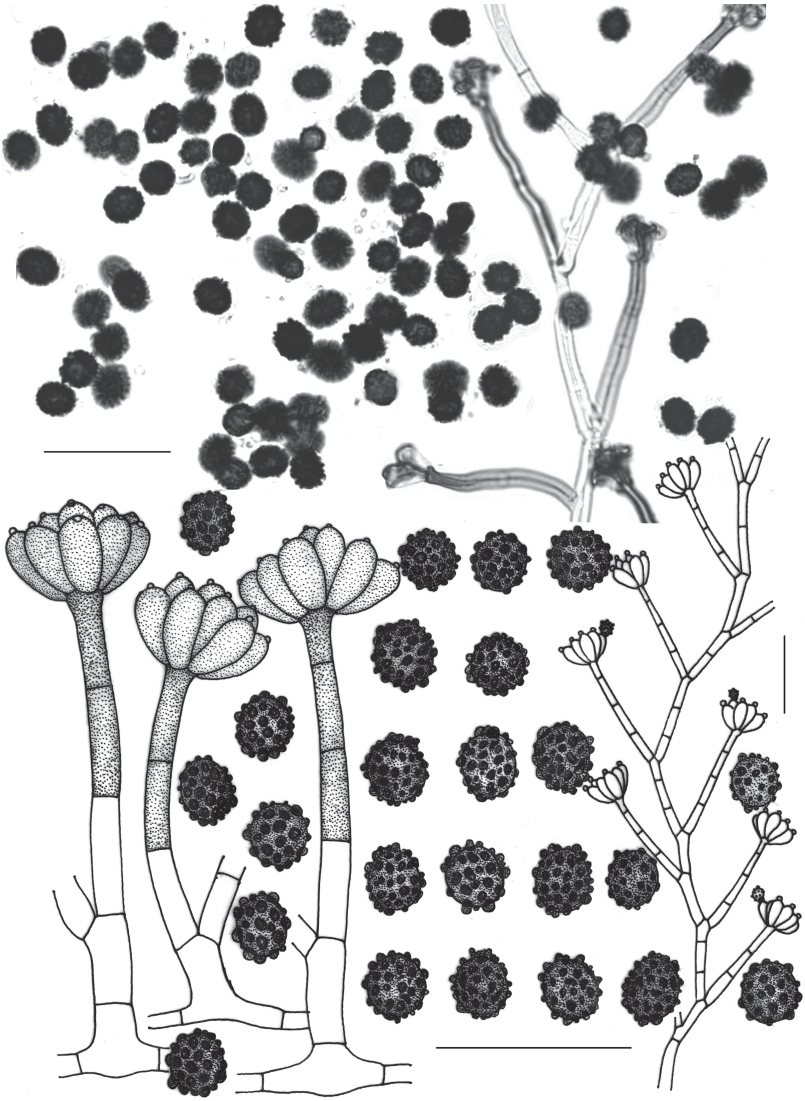

Fig. 1. *Stachybotrys jiangziensis* (ex holotype). Conidia, conidiophores, and conidiogenous cells. Above: photomicrographs. Below: drawings. (Bars = 25 μm).

Colonies on CMA (cornmeal agar) at 25°C for 21 days 4–6 cm diam., effuse, darkish grey to black. Mycelium mostly superficial, partly immersed. Hyphae branched, septate, smooth, hyaline to subhyaline, 1.5–3 μm wide. Conidiophores

erect, branched, 2–4-septate, subhyaline near the base, greylish brown above, smooth, 60–80 µm long, 4–5 µm wide near base. Phialides borne in groups of 6–8 at the apices of conidiophores, pale brown, smooth, 8–10 × 5–7 µm. Conidia globose to subglobose, tuberculate, brown to dark brown, 6–9 µm in diameter.

In conidial morphology this fungus somewhat resembles *Stachybotrys nilagirica* Subram. (Subramanian 1957) and *S. sphaerospora* Morgan-Jones & R.C. Sinclair (Morgan-Jones & Sinclair 1980). However *S. nilagrica* has larger conidia (16–20 µm diam.) and *S. sphaerospora* larger (11–12 µm diam.), ridged conidia than *S. jiangziensis*.

Stachybotrys xigazenensis Y.M. Wu & T.Y. Zhang, **sp. nov.** Fig. 2

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Coloniae in CMA effusae, atrogriseae vel nigrae. Hyphis ramosis, septatis, laevibus, hyalinis vel subhyalinis, 2–3 µm crassis. Conidiophora erecta, 1–4-septata, basim versus subhyalina, supra griseo-brunnea, verrucosa, interdum granulis magnis tecta, 60–100 µm longa, ad basim 4–6 µm diam. Phialides 6–8 ad apicem conidiophori productae, pallide brunneae, leves, 7–10 × 5–8 µm. Conidia ovoidea, ellipsoidea vel oblonga, tuberculata, brunnea vel atrobrunnea, 9–12.5 × 7.5–10 µm.

Fig. 2. *Stachybotrys xigazensis* (ex holotype). Conidia, conidiophores, and conidiogenous cells. Left: photomicrographs. Right: drawings. (Bars = 25 µm).

Holotype: China. Tibet, Xigazen, from a grassland soil, altitude 4150 m, 19 Sept. 2007, Y.M. Wu, HSAUPII$_{07}$1450, **holotype**; HMAS 196257, **isotype**.

Etymology: in reference to the type locality.

Colonies on CMA at 25°C for 21 days 5–8 cm diam., effuse, darkish grey to black. Mycelium mostly superficial, partly immersed. Hyphae branched, septate, smooth, hyaline to subhyaline, 2–3 µm wide. Conidiophores erect, sympodially branched, 1–4-septate, subhyaline near the base, greyish brown above, verrucose, sometime covered with large granules, 60–100 µm long, 4–6 µm wide near base. Phialides borne in groups of 6–8 at the apices of conidiophores, pale brown, smooth, 7–10 × 5–8 µm. Conidia ovoid, ellipsoid or oblong, tuberculate, brown to dark brown, 9–12.5 × 7.5–10 µm.

This fungus somewhat resembles *Stachybotrys chartarum* (Ehrenb.) S. Hughes (Hughes 1958) and *S. microspora* (B.L. Mathur & Sankhla) S.C. Jong & E.E. Davis (Jong & Davis 1976) in conidial colour and size, but *S. xigazensis* has more obviously tuberculate conidia. In addition, the conidia of *S. xigazensis* are larger than those of *S. microspora* (6–8 × 4–5 µm) and wider than those of *S. chartarum* (7–12 × 4–6 µm).

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